

FINDING YOUR BLIND SPOT

 **PROMISE**

SANFORD[®]
RESEARCH

EXPERIMENT TIME!

Gather the materials:

- 3x5 Card
- Yard Stick
- Marker

Mark the card with a dot and an x.



EXPERIMENT TIME!



Close one eye and stare at the x on the card. Hold the card at arm's length and slowly bring the card closer to your face until the dot disappears.

EXPERIMENT TIME!

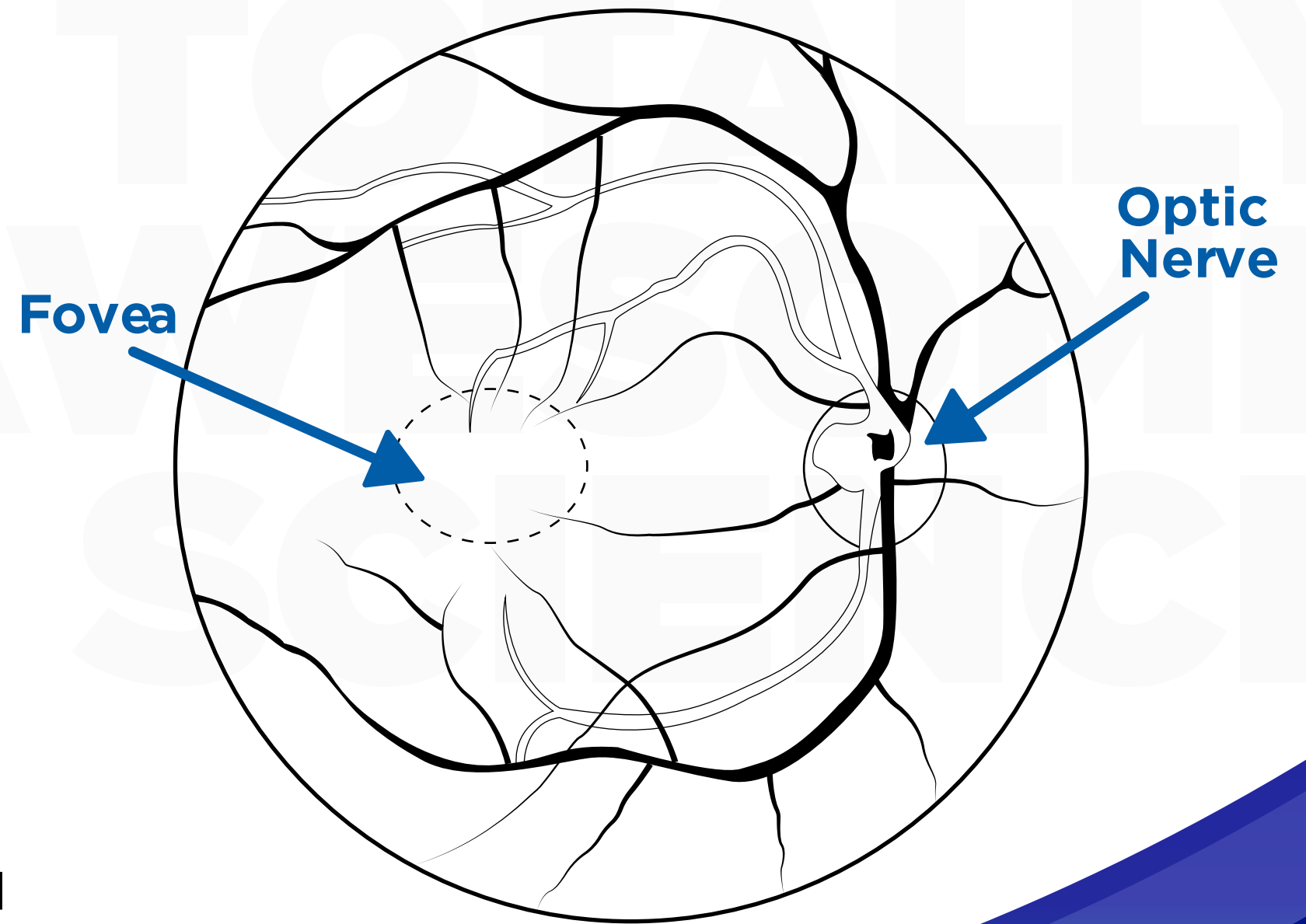
You've found your blind spot!

The blind spot is where the optic nerve comes from the brain into the eye. In this spot, your eye's retina has no light receptors. When you hold the card so the light from the dot falls on this spot, you cannot see the dot!

ANATOMY OF YOUR EYE

The **optic nerve** is a nerve at the back of your eye that connects your retina to your brain. It is made of a bundle of nerve fibers that carry messages from your eye to your brain.

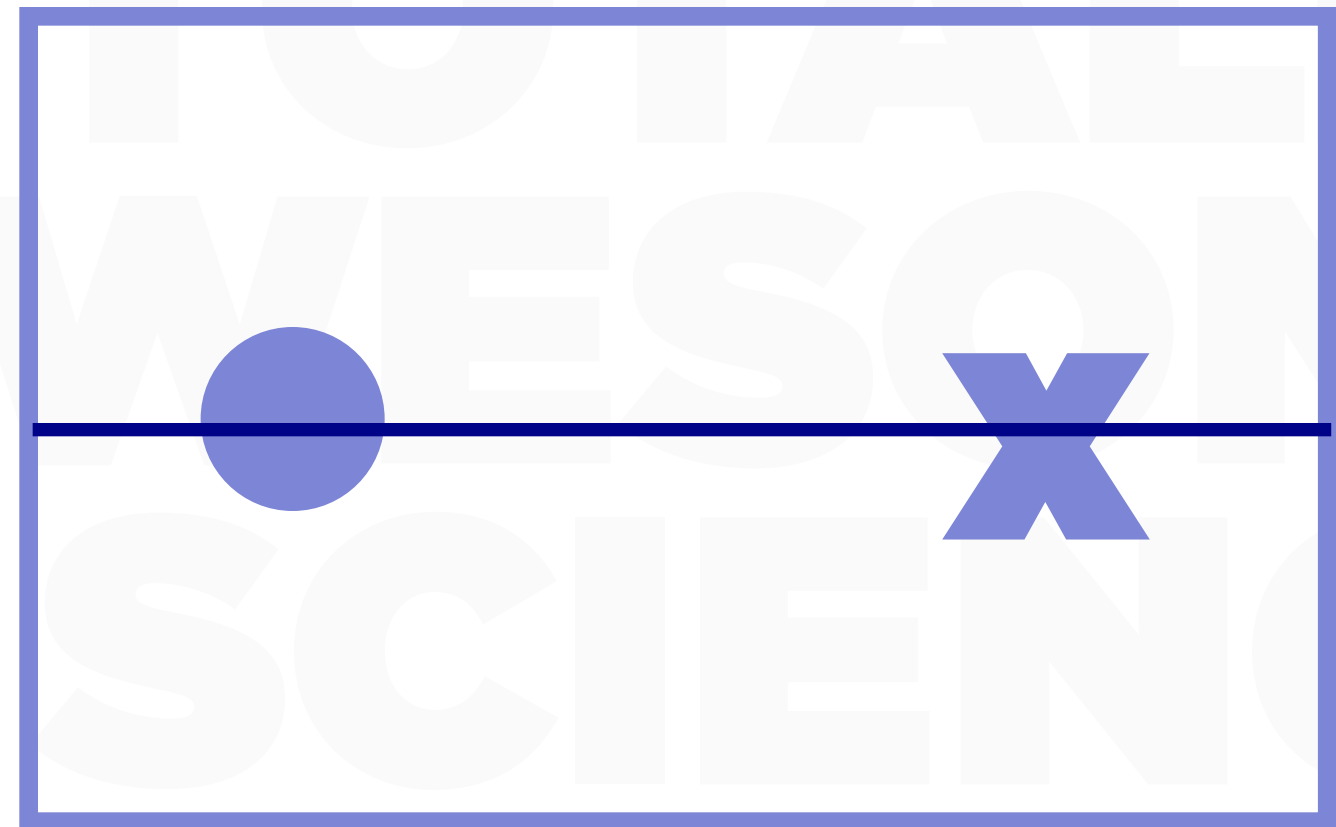
The **fovea** is an area of the retina that is densely packed with light receptors, giving you the sharpest vision.



EXPERIMENT TIME!

Now let's measure your blind spot!

Draw a line through the card as shown.



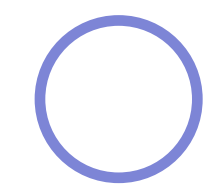
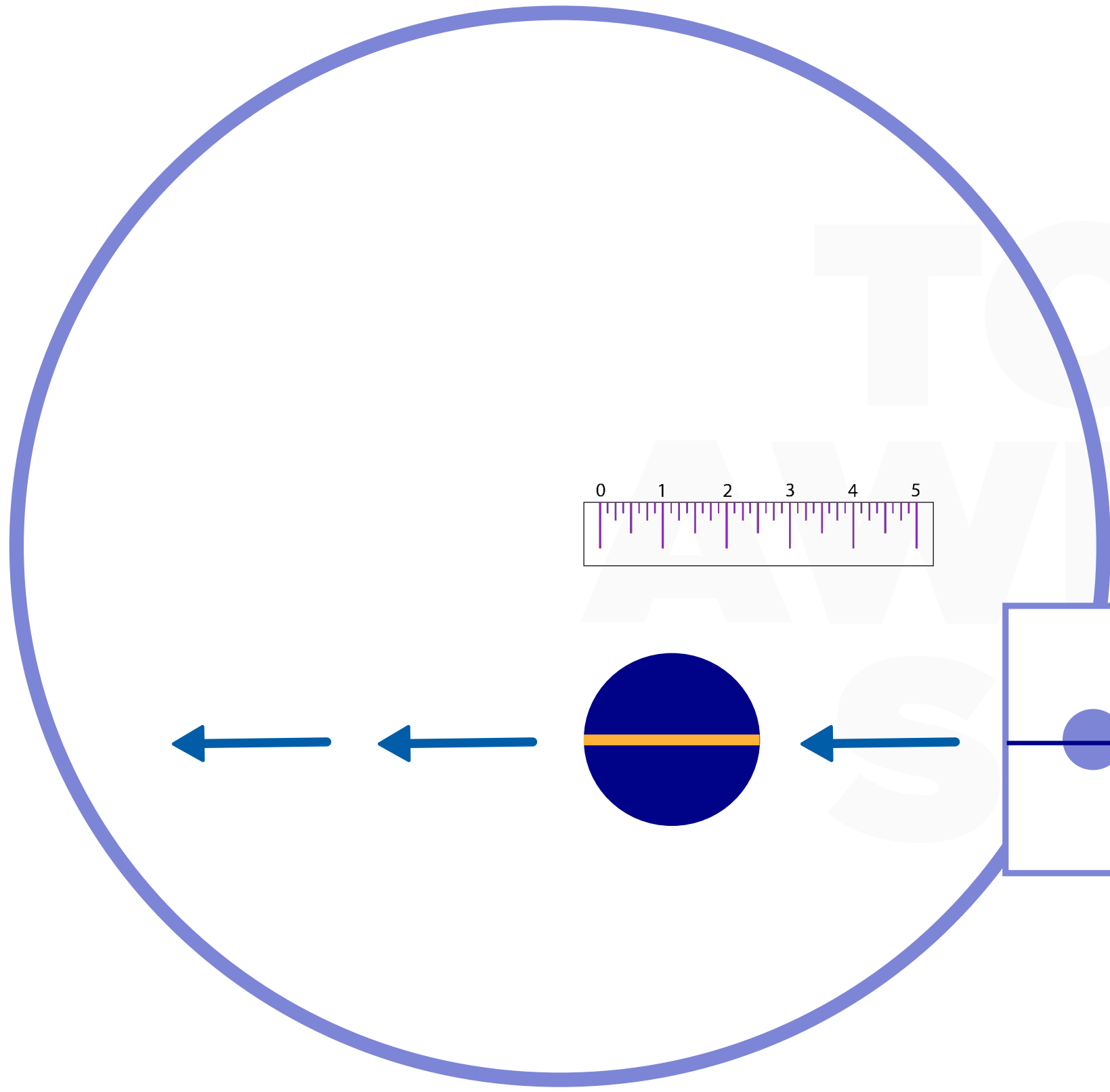
MEASURE YOUR BLIND SPOT BY YOURSELF

1. Hold the card at 25 cm from your face.
2. Close your left eye.
3. Look at the cross with your right eye.
4. Move a pen across the card until the point disappears and mark the card at that spot.
5. Repeat this process several times from slightly different angles and from the opposite side of the blind spot. When you have several marks, connect the marks to form a circle.
6. Then, draw a line through the center of the circle and measure it as the diameter.

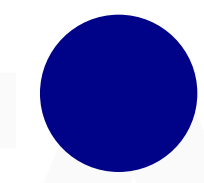
MEASURE YOUR BLIND SPOT WITH A PARTNER

1. Hold the card at arm's length.
2. Have your partner measure the distance from the card to your eye.
3. Slowly move the card horizontally left and right.
4. Note where the dot disappears and reappears.
5. Have your partner measure the distance between where the where it disappears and reappears.

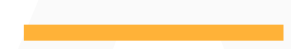
Based on whether or not you have a partner, follow the steps in your lab notebook and record the data.



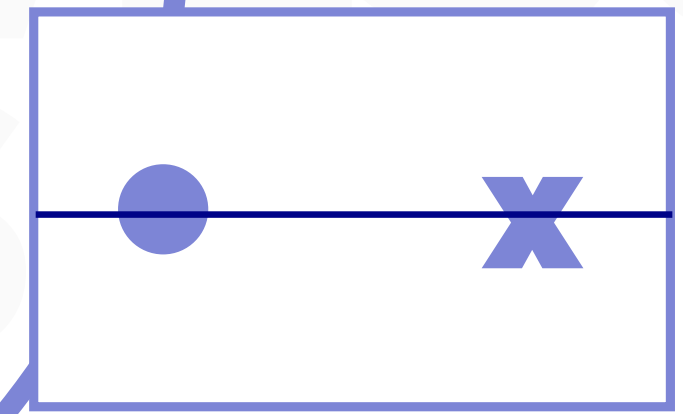
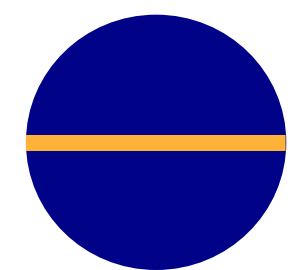
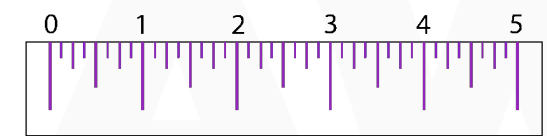
Field of Vision



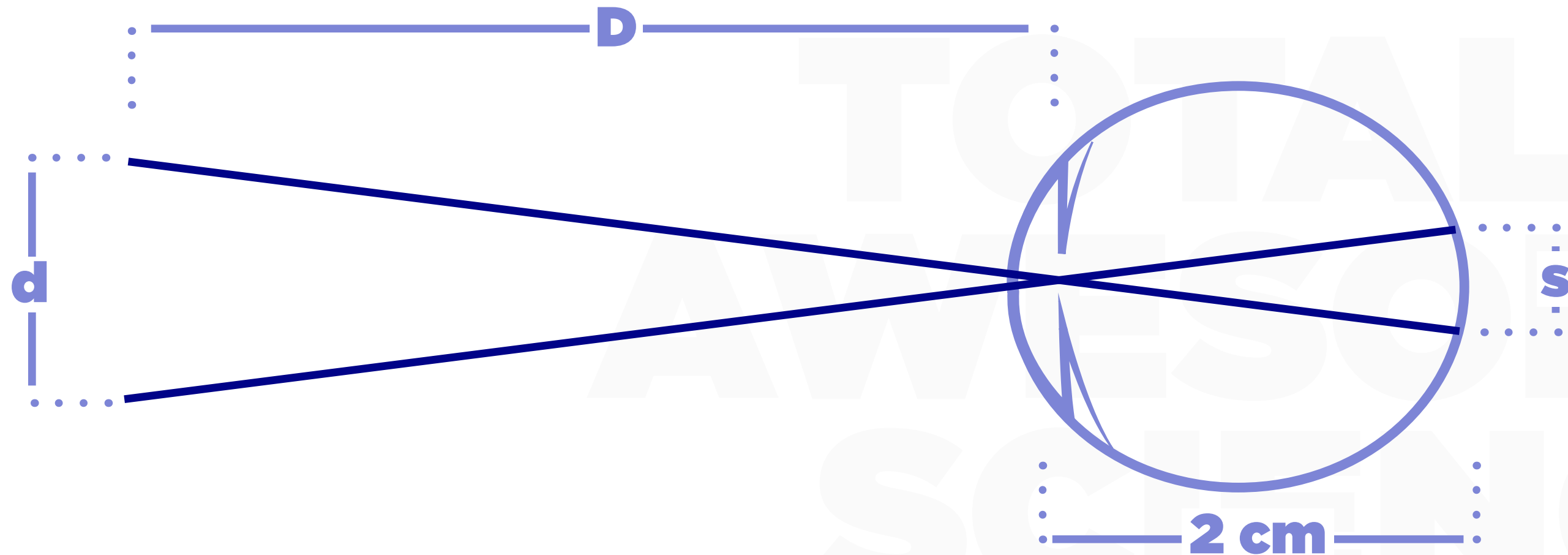
Blind Spot



Diameter of Blind Spot



DO THE MATH: $s/2 = d/D$



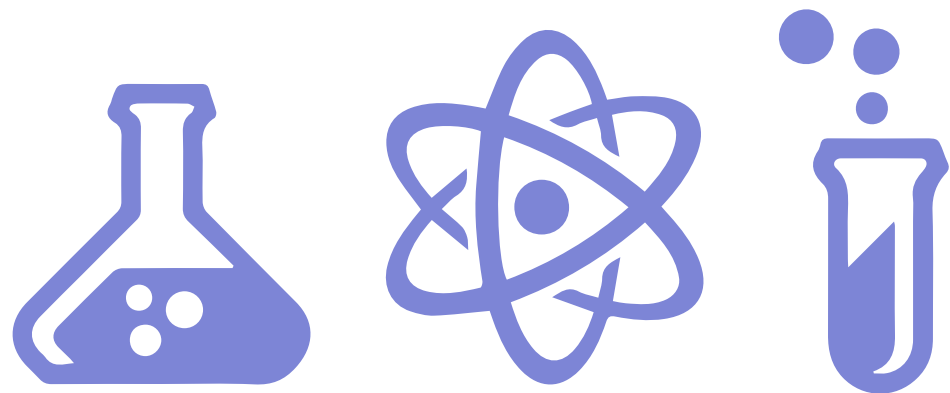
Diameter of the blind spot on the note card _____ = d

Distance from the face _____ = D

Depth of your eye is about 2 cm

Size of your blind spot _____ = s

ANSWER THE REMAINING QUESTIONS IN YOUR LAB NOTEBOOK!

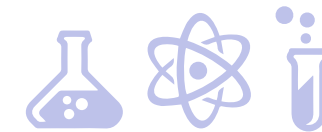


6. How does this relate to a blind spot when driving?

7. How might your blind spot affect you in your life?

8. Is your neighbor's blind spot the same size as yours?

9. What more would you like to know about your eye and how can you find the answers?



Here's what I did today!

Today I visited the virtual PROMISE Lab at Sanford Research. I learned the optic nerve that passes through the retina in my eye creates a blind spot. I conducted an experiment to measure the size of my own blind spot.